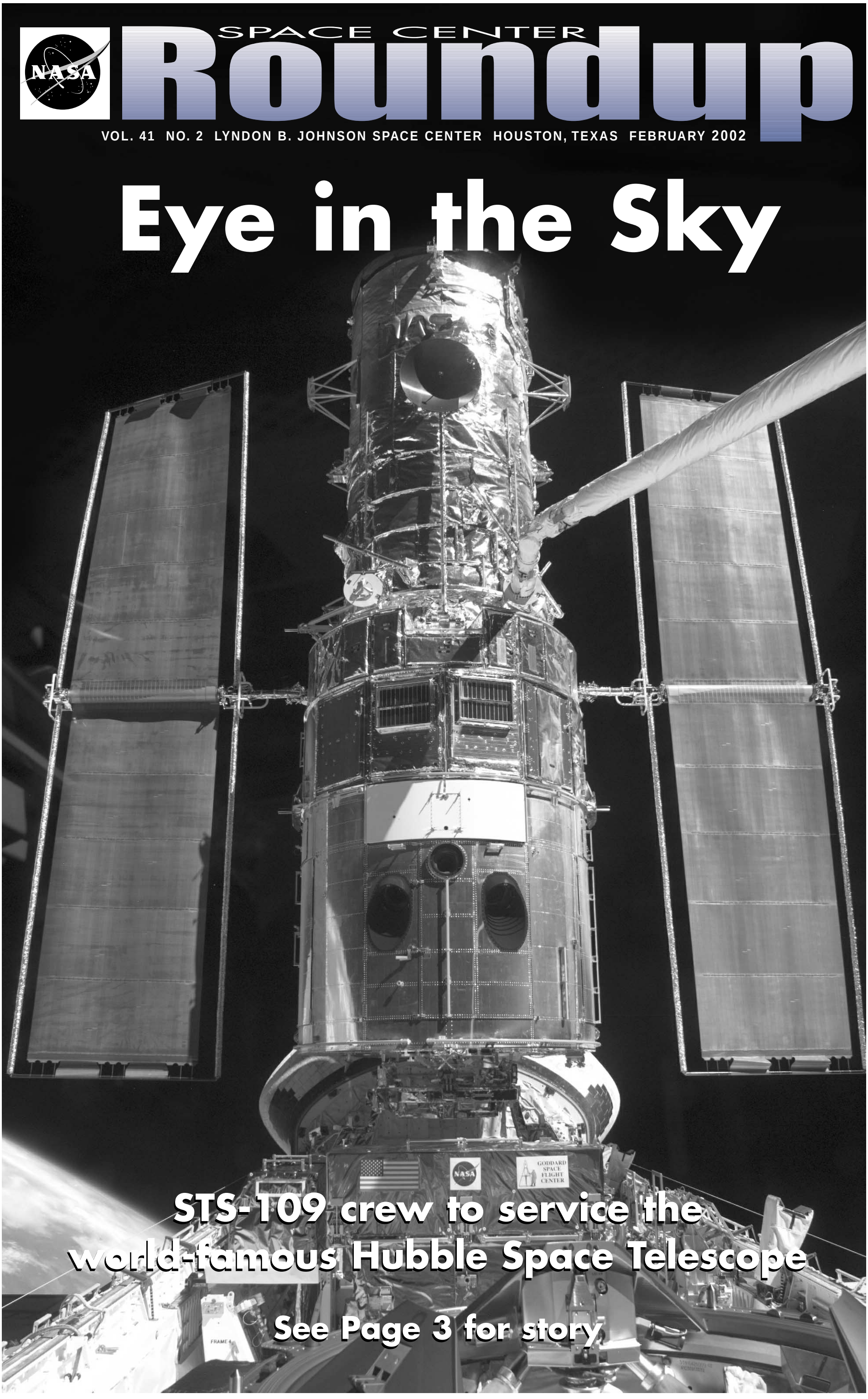
SPACE CENTER
Roundup

VOL. 41 NO. 2 LYNDON B. JOHNSON SPACE CENTER HOUSTON, TEXAS FEBRUARY 2002

Eye in the Sky



STS-109 crew to service the world-famous Hubble Space Telescope

See Page 3 for story

PAO: TELLING YOUR STORY

By Dan Carpenter, Director of Public Affairs

The Johnson Space Center Public Affairs (PAO) Team is looking forward to another exciting year. I am proud to be a member of this talented team. We work hard to help tell the stories of our Center's research, engineering, science and space flight programs, with a focus on the employees who work tirelessly "behind the scenes."

We tell these stories through various outlets. The most visible way is through the *Roundup*, which originates in PAO. For instance, last month the *Roundup* highlighted the Human Resources Team and some of the new programs they are fielding.

This month the *Roundup* is giving you another behind the scenes look – this time at PAO. We will show you how we have changed some of our services, introduce you to our team and provide details about contacting us to learn more about what we offer.

Do you know your JSC PAO team? Numbers can help tell you our story. Here is a sampling of what we did last year to tell *your* story to the public:

- The Newsroom wrote and distributed 127 press releases and more than 200 status reports during space flight missions;
- Our Exhibits program provided exhibits for 461 locations – from Houston to Tokyo to Moscow to Paris to Rio de Janeiro;
- We received more than 400 requests for interviews and completed 466 (some requested multiple interviewees) from media around the globe;
- The www.spaceflight.nasa.gov Web site attracted approximately 9 million visitors; visiting the 45,000 pages on the site, including the 23,000 pages that our web team either edited or created last year
- The External Relations Office, which rejoined PAO in September, scheduled a total of 283 protocol tours – 198 of them were VIP tours and 85 were educational tours.

But numbers only tell you one aspect of the story. Here are just some of our responsibilities:

- Cover missions and ongoing operations using NASA TV and the host of production tasks that entails
- Work media requests
- Produce videos and other presentations
- Coordinate involvement with major network and film producers
- Process Freedom of Information Act requests
- Coordinate JSC participation in community events and exhibits
- Coordinate requests for speakers
- Develop and manage the most popular Agency Web site: www.spaceflight.nasa.gov

Finally, our story wouldn't be complete if it didn't involve telling your story. How do we tell your story or, sometimes, how do we help you tell it? As you will find out more on pages 4 and 5, our team is using some new resources and improved tools. However, more important than the resources and tools is our team's dedication and commitment. We have reallocated and reprioritized our resources to provide you with quality, timely information about:

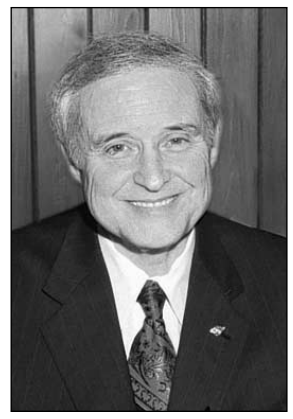
- Upcoming missions and ongoing operations
- Relevant employee-related HR information about development and other programs
- JSC People at Work
- Letters and key messages from Center Management
- In-depth coverage of JSC stories and much more

In the coming issues of the *Roundup*, and soon through videos over the JSC cable system and JSC Web site, we hope to offer you many more glimpses – behind the curtain so to speak – of what many people do on a daily basis, many times with little or no recognition outside of their own team.

There are so many more stories at JSC that the public and other employees are interested in hearing about. We are dedicated to increasing our ability to help tell those stories. And, through close coordination with HR and the Information Systems Directorate, we are realizing that many other directorates find value in telling the JSC story to more people onsite as well.

As PAO strives to be better storytellers for and with you, we seek your input and suggestions. I hope you enjoy both the *Roundup*'*s* new look and the fresh outlook it has adopted. That outlook is representative of our entire PAO approach. ❖

FROM THE DESK OF ROY S. ESTESS



The President has presented to Congress his budget for fiscal year 2003. The budget relating to human space flight and the Johnson Space Center are essentially as we expected.

The year ahead will hold many challenges for us here at JSC. We recognize that we must be fiscally accountable to the American public. Consistent with that accountability, we will maintain our commitment to safety and record of technical achievements that have been the hallmark of this Agency and Center for the past 40 years.

While less than the 2002 budget, the budget for 2003 is consistent with both Station and Shuttle planning. We will continue to build and operate the International Space Station and provide transportation with the Space Shuttle. The projected budget does reflect the plan for some job losses at JSC and other parts of the country. This is due to the planned completion and deployment of space hardware.

Understandably, we all are concerned about possible job losses as a result of this budget plan. However, the budget process is not yet sufficiently mature for us to speculate on any possible specific numbers locally.

Please be patient in this process and know that Center management is fully aware of and understands your concerns. I remain confident you will continue to keep your focus on the amazing work we have before us to keep our space flight team operating safely and on schedule.

I am proud of each one of you. You too should be proud of the incredible technical achievements of our operational team. Together, as a team, we will continue our commitment to accomplishing our country's goals of human space flight.

Roy S. Estess

Combined Federal Campaign sets record

JSC closed out the 2001 Combined Federal Campaign with a record contribution of $609,375 to the Texas Gulf Coast CFC.

Contributions from employees, contractors, military personnel and other government employees who work at the Center, as well as retirees, far exceeded JSC's goal of $561,000. The CFC goal for the Houston and Galveston area was $2.82 million, and JSC proved again this year to be a major contributor to the success of the area campaign.

"I want to congratulate all of you for a great team effort and for your individual generosity. You have once again demonstrated how much you care for those in need," Acting Director Roy Estess said. "In these trying times, your contributions will go a long way in helping our community and our nation."

While the campaign is over, the CFC and the charitable agencies it supports are available to help those in need throughout the year. For more information, contact Krista Heidi, CFC Regional Coordinator, at (713) 685-2734 or Candy Hunt, JSC CFC coordinator, at x31836. ❖

Editor s note: You may notice the *Roundup* has once more switched its paper. While the coated text paper used for the January issue is indeed recyclable, the JSC recycling contractor does not currently recycle coated paper due to cost. The *Roundup* has switched to an uncoated paper because we are all environmentally aware here at JSC.

Space Shuttle: Hubble Space Telescope servicing mission to be a challenge

The STS-109 mission of *Columbia* to service the Hubble Space Telescope is scheduled for launch no earlier than Feb. 28, 2002, at the Kennedy Space Center, Fla.

The mission is commanded by Scott Altman (Cmdr., USN) with Duane Carey (Lt. Col., USAF) serving as Pilot. Dr. John Grunsfeld will be Mission Specialist 1 and Payload Commander and Nancy Currie (Lt. Col., USA) is the Flight Engineer and Mission Specialist 2. Dr. Rick Linnehan is Mission Specialist 3, Dr. Jim Newman will serve as Mission Specialist 4 and Dr. Mike Massimino will be Mission Specialist 5.

On STS-109, the Hubble Space Telescope will be serviced for the fourth time since it was launched, as Grunsfeld and Linnehan team up to conduct three spacewalks and Newman and Massimino are paired for two spacewalks to install new, more durable solar arrays, a large gyroscopic assembly to help point the telescope properly, a new telescope power control unit and a cooling system to restore the use of a key infrared camera and spectrometer instrument which has been dormant since 1999.

In addition, almost 12 years after Hubble was launched, the telescope's view of the universe will be dramatically improved with the addition of the newest scientific instrument – the Advanced Camera for Surveys (ACS). With up to four times the speed of previous instruments, this device will be able to survey a field of the cosmos twice as large as before with 10 times the resolution.

The new instrument's potential dwarfs the capability of the existing and complementary Wide Field Planetary Camera, which provided the world's astronomers with breathtaking views of the Eagle Nebula and the Hubble Deep Field in recent years. The ACS will replace the Faint Object Camera, the last of Hubble's original instruments and the last to require the corrective optics that were installed in Hubble during the first servicing mission in 1993. All of the current generation instruments have their own internal corrective mirrors.

NASA JSC2001-E-24454

Astronaut John M. Grunsfeld, STS-109 Payload Commander, uses virtual reality hardware at JSC to rehearse some of his duties on the upcoming STS-109 mission, NASA's fourth servicing visit to the Hubble Space Telescope (HST).

The new solar arrays, which are the third set of power-generating wings for Hubble in its history, will generate 20 percent more power at two-thirds the size of the current arrays, with a new rigidity and durability that will provide the telescope with enough power for the rest of its operational lifetime. Rather than rolling up, the arrays each fold in two sections, providing greater reliability than its predecessors.

One of four Reaction Wheel Assemblies will be replaced during the flight. This mechanism helps to maneuver the telescope into the proper orientation for scientific observations. Although the assembly has not failed, it is exhibiting erratic behavior. Only three of the four assemblies are required for science, but a new assembly will be installed to insure Hubble's capability for new discoveries in the years to come.

The new Power Control Unit is the heart of electrical production for Hubble's systems. This unit will collect energy from the new solar arrays and distribute that power to all key Hubble components. The original unit has been operating since Hubble's launch in 1990. With Hubble's mission of discovery now extended to 2010, the new power unit will enable Hubble to remain healthier and more productive.

Its replacement will be the most complex task of the mission, requiring the delicate disconnection and reconnection of 36 small and closely spaced electrical connectors by the spacewalking astronauts. For the first time in history, all of Hubble's systems will be completely shut down to accommodate the spacewalking upgrade effort, which should take seven hours or more to complete.

The spacewalks and specific tasks to upgrade Hubble's instruments are regarded as more intricate and challenging than astronauts have encountered in previous servicing missions.

The flight will be the 27th for *Columbia* and its first mission since undergoing major modifications after its last flight in 1999. ❖

For more details about the mission, please visit:
http://sm3b.gsfc.nasa.gov/

Behind the scenes with . . .

Bryan Austin, STS-109 Lead Flight Director

By Melissa Davis

Q *Can you give any insight on the work being done on the Hubble?*

A We have a fantastic team of people working on the preparations for this mission. The Hubble Space Telescope (HST) team at Goddard Space Flight Center (GSFC) is very experienced, having completed three previous servicing missions, as well as dealing with the day-to-day operations of the HST on orbit.

The objectives of Hubble Servicing Mission 3B are to improve Hubble's scientific productivity by greatly improving visible imaging capability, restoring infrared science capability and also to replace failed or degraded spacecraft components. Specifically, we are replacing the pair of solar arrays with new fix panel arrays, replacing a failing power control unit, installing a new Advanced Camera for Surveys, which is expected to increase scientific discovery by 10 times, and installing a cooling system to regain the operations of the Near Infrared Camera and Multi-Object Spectrometer science instrument.

Q *What are some specific challenges you will face?*

A Five EVAs (extravehicular activity, or spacewalks) are the most we have ever attempted in a single Shuttle mission. This HST servicing mission is shaping up to be the most challenging of any servicing mission. Each of the EVA tasks fills most of the EVA day with little margin to accommodate failures and still get everything accomplished.

Q *What should readers keep in mind and be on the lookout for when following this particular mission?*

A It may be difficult to recognize, but each of these EVAs are very tightly choreographed. Each EVA crewman will be doing something different, one on the RMS and one free-floating. Along with this, the flight control teams in JSC's Mission Control Center (MCC) and at GSFC's Space Telescope Operations Control Center (STOCC) are integrated into the activities to configure the HST in preparation for the EVA, verify subsequent safety statuses and then quickly test the new equipment to ensure it is working.

Q *What interesting behind-the-scenes activity is going on with this mission that readers might be surprised to know?*

A Because each EVA is so tightly choreographed, we have to watch the extravehicular mobility unit (EMU) suit consumables (oxygen, power, etc.) to determine how much longer we could stay out in the event we have a problem. The EVA flight controller is continually tracking the pace of the EVA and determining if the crew is ahead or behind and what we would do if we had to "breakout" of the EVA.

Another interesting item is the magnitude of ground team interaction and communications that goes on between the team in Houston and the HST team.

Q *Would you like to add anything else?*

A I have been fortunate to play a part in every HST mission. I was the Training Simulation Supervisor for STS-31 and STS-61. After being selected into the Flight Director Office, I was one of the Flight Directors for STS-82 and STS-103. It's a great privilege for me to be the Lead Flight Director for this mission.